

CLAIMS

What is claimed is:

1. A display driver for driving data lines of an electro optic device based on display data, comprising:

a display data random access memory including a plurality of word lines, a plurality of column lines, and a plurality of memory cells each storing display data of one pixel;

a display address decoder selecting a word line of the display data random access memory based on a display address;

a display column address decoder selecting a column line of the display data random access memory based on a display column address;

a plurality of read-out bit lines each commonly coupled to a memory cell group specified by a corresponding column line;

a scroll bus coupled to the plurality of read-out bit lines;

a plurality of data latches each corresponding to each data line of the electro optic device and loading display data on the scroll bus;

and a driving circuit driving the data lines based on the display data loaded in the plurality of data latches;

wherein display data of one pixel are read out from a memory cell specified by a word line selected by the display address decoder and a column line selected by the display column address decoder, the data are output to the scroll bus via the read-out bit line coupled to the memory cell, and the data on the scroll bus are loaded in each of the plurality of data latches.

2. The display driver according to Claim 1, further comprising:

a shift register outputting a shift output shifted based on a given shift clock;

wherein each of the plurality of data latches loads display data on the scroll bus based on a shift output of each stage of the shift register.

3. The display driver according to Claim 1, further comprising:

a line latch loading display data that are loaded in the plurality of data latches in one horizontal scan cycle;

wherein the driving circuit drives the data lines based on display data loaded in the line latches instead of the plurality of data latches.

4. A display driver for driving data lines of an electro optic device based on display data, comprising:

a display data random access memory including a plurality of word lines, a plurality of column lines, and a plurality of memory cells each storing display data of one pixel;

a display address decoder selecting a word line of the display data random access memory based on a display address;

a display column address decoder selecting a column line of the display data random access memory based on a display column address;

a plurality of read-out bit lines each commonly coupled to a memory cell specified by a column line;

a scroll display data generating circuit including a plurality of data latches that each correspond to each data line of the electro optic device, shifting display data of one pixel that are output to each read-out bit line by a shift amount in line with a given scroll amount, and loading the data in any of the plurality of data latches, so as to generate display data of one horizontal scan line;

and a driving circuit driving the data lines based on the display data of one horizontal scan line generated by the scroll display data generating circuit.

5. An electro optic device, comprising:

a plurality of scan lines;

a plurality of data lines;

a plurality of pixels coupled to the plurality of scan lines and the plurality of data lines;

a scan driver scanning the plurality of scan lines;

and the display driver according to Claim 1 driving the plurality of data lines.

6. An electro optic device, comprising:

a display panel including a plurality of scan lines, a plurality of data lines, and a plurality of pixels coupled to the plurality of scan lines and the plurality of data lines;

a scan driver scanning the plurality of scan lines;

and the display driver according to Claim 1 driving the plurality of data lines.

7. An electronic apparatus, comprising:

the electro optic device according to Claim 5;

and a display data generator generating display data to be supplied to the electro optic device.

8. A display driving method for driving data lines of an electro optic device based on display data that are read out from a display data random access memory including a plurality of word lines, a plurality of column lines, and a plurality of memory cells each storing display data of one pixel, comprising:

specifying a memory cell by a word line out of the plurality of word lines and a column line out of the plurality of column lines;

outputting display data of one pixel that are stored in the memory cell to a scroll bus via a read-out bit line commonly coupled to a memory cell group that is specified by the column line;

loading the display data of one pixel on the scroll bus in any of a plurality of data latches each corresponding to each data line of the electro optic device;

and driving the data lines of the electro optic device based on the display data loaded in the plurality of data latches.

9. The display driving method according to Claim 8,

wherein the step of loading the display data of one pixel on the scroll bus in each of the plurality of data latches is repeated for the number of pixels to be driven in one horizontal scan cycle so as to load display data of one horizontal scan line in the plurality of data latches, and the data lines of the electro optic device are driven based on the display data loaded in the plurality of data latches.